

RECEIVED
Int. Agr. Inst.

194

BULLETIN No. 51

GOVERNMENT OF THE PROVINCE OF SASKATCHEWAN
DEPARTMENT OF AGRICULTURE

FENCING THE FARM

By W. J. RUTHERFORD, Dean of Agriculture,
University of Saskatchewan

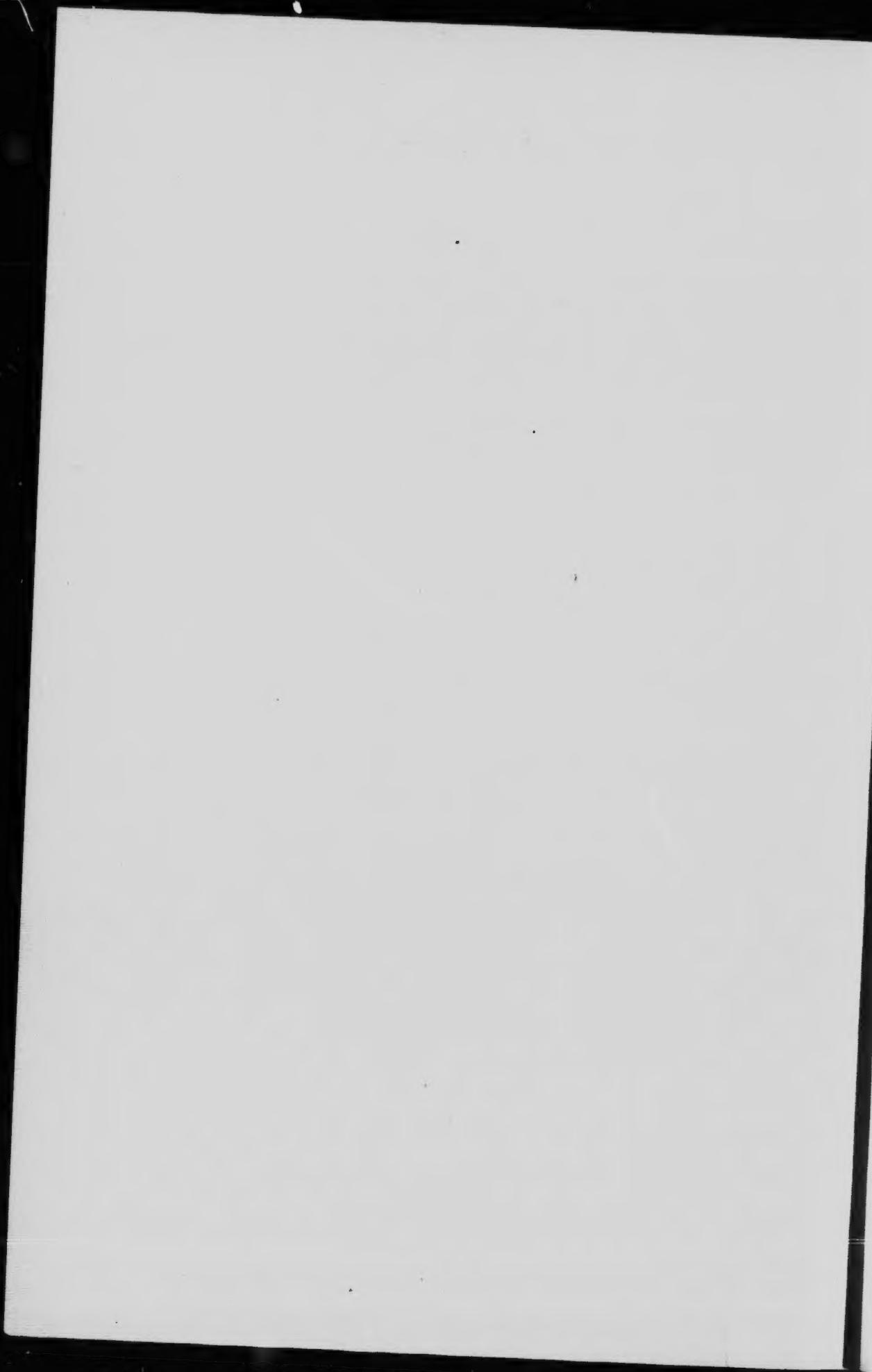
PUBLISHED BY DIRECTION OF THE HON. W. R. MOTHERWELL,
MINISTER OF AGRICULTURE



REGINA:
J. W. REID, King's Printer
1917

304
3151





FENCING THE FARM

By W. J. RUTHERFORD, Dean of Agriculture,
University of Saskatchewan

Every year there is more and more fencing of one sort and another done—some well done, much poorly done. Fence building is certain to become a very common practice in Saskatchewan in the next few years and with this in view this leaflet is being prepared to assist those who seek information.

Fences are erected around the outside of the farm in order to protect the fields and crops and animals from marauding animals. Stray domestic animals damage crops and roving entire animals are a menace to the breeder's prospects. By fencing against coyotes and dogs, sheep raising may be safely engaged in. Many weeds that tumble about ahead of the wind and scatter their seeds as they go are stopped by a well built outside fence. Inside fences are necessary in order to inclose pastures for different classes of stock and to make roadways and lanes from buildings to fields. Properly constructed fences add to the appearance of the farm and farmstead. They enable the farm owner to diversify in crops and live stock and thus make possible the maintenance of fertility, the keeping down of weeds, the raising of bigger and better crops, all in order that farming may be conducted as a better paying business.

The farmer will decide for himself as to what fencing is required. It may be that he will wish to surround a quarter or half section for reasons which he himself knows best—weeds, coyotes, cattle, etc.—or it may be that a forty or eighty acre pasture is required for horses or cattle convenient to the farmstead. Perhaps it is the farmstead itself that he wishes to protect. Before commencing such an important piece of work, he should make a plan of his farm and lay out the boundary and cross fences that should be built on it during the next 10 to 20 years. If this is carefully done the first fence can be built and others added with little additional expense and fences will not have to be torn down because of ill-conceived plans.

IMPORTANT CONSIDERATIONS.

When plans are completed the kind of fence will have to be decided upon. It will very likely be either barbed or woven wire. If only cattle or horses are to be limited by the fence and if one is not prepared to make an outlay sufficient to cover cost of woven wire then three or four strands of barbed wire may be used. This can later be made effective for pigs and sheep by placing beneath it a seven strand, 26 inch, woven wire fabric. If one has in mind a fence that will turn horses, cattle, pigs, sheep, coyotes and dogs, then an eleven strand, 55 inch fence

1 ACRE
REQUIRES
56 RODS
OF
FENCE

8 RODS

20 RODS

1 ACRE
REQUIRES
52 RODS
OF
FENCE

10 RODS

16 RODS

16 RODS

2 ACRES
REQUIRES
72 RODS
OF
FENCE

20 RODS

22 RODS

3 ACRES
REQUIRES
88 RODS
OF
FENCE

22 RODS

20 RODS

4 ACRES
REQUIRES
104 RODS
OF
FENCE

32 RODS

25 RODS 5 FT.

4 ACRES
REQUIRES
101 RODS $3\frac{1}{2}$ FT.
OF FENCE

25 RODS 5 FT.

Showing length of fencing required for fields of various sizes.

Showing length of fencing required for fields of various sizes.

with close horizontal bars at the bottom will fill the requirements well. A very effective fence for all practical purposes except for turning coyotes and dogs is the eight strand 45 inch fabric with one barb wire placed 8 inches above. All these woven wire fabrics should be made of number 9 gauge horizontals and 11 or 12 gauge uprights, the latter being placed 12 to 16 inches apart. The larger wire is stronger and is better galvanized, which means longer life for the fence and less repairing.

POSTS.

There are three materials of which fence posts are made and when deciding upon which to use one must take into consideration the cost, strength and durability. Any of these materials can be obtained if one wishes to pay the price. Wooden posts are of many kinds. On parts of the prairies willow and poplar posts can be had for the cutting but these at best are short lived. They are, however, being used extensively where they are near at hand and easily obtained. Over a large area posts have to be obtained from a distance and then it is a matter of choosing a durable wood of the right size, length and soundness that has been cut at the right time, peeled and seasoned. In all the tests that have been made with wood, round cedar posts 4 to 6 inches at the small end, cut green in December or January, peeled and seasoned, are the most durable—the life being about 18 to 20 years. The less sapwood the longer lived will be the post, other things being right. Creosoting timber helps to prolong its life. Split cedar posts are cheaper and, if creosoted, give very good satisfaction. Tamarac and spruce are used but their life is not so long as cedar. Willow and poplar are constantly needing repairs and substitutions after three years of use. The cost for digging holes, setting, etc., adds much to the cost of wooden posts. A good workman can set only about fifty a day. The cost per post will vary according to wages and kind of soil.

Concrete posts reinforced with iron and steel can be made in moulds on the ground. They are durable when properly made. The expense will vary according to the cost of procuring gravel, sand and reinforcing. Holes have to be dug and posts set as with wood but when once in place they are there for life. Neither fire, weather nor fungous diseases do them harm.

A number of fence companies are now putting on the market steel posts that are proving very attractive to fence builders. These are made in different ways—angle, channel, round and trussed. They have been experimented with for a number of years and have proved strong and durable. The cost varies with the weight. The first cost is usually more than that of cedar but there are no holes to dig except for corners and brace posts. The intermediate posts are driven at the rate of about 300 per day. This materially cheapens the first cost of the fence.



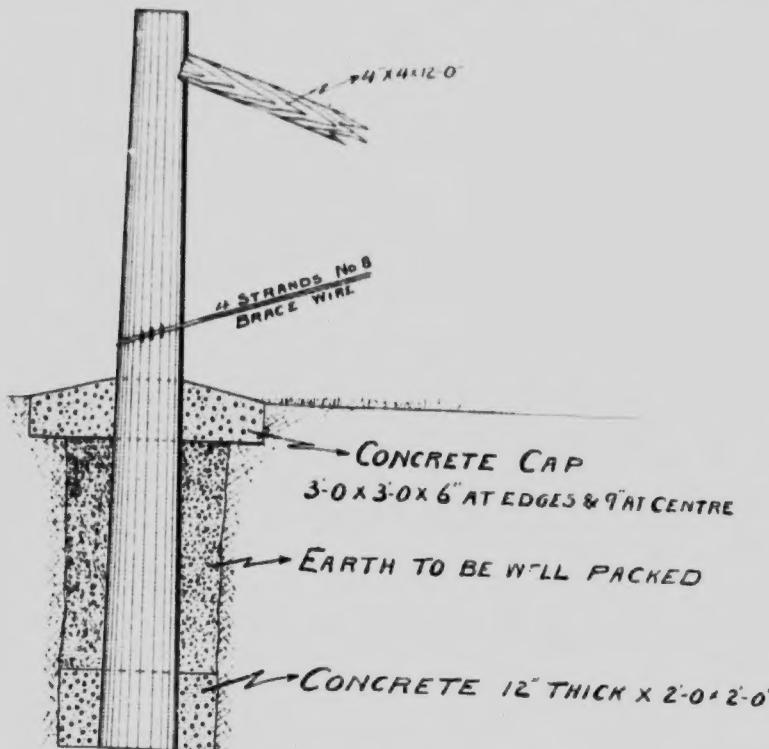
Iron post showing clips for attaching wire.

The wire is attached to the posts by clips on the posts themselves so there are no staples to buy or drive. Repairs are slight. Steel posts make a tidy, attractive, durable fence, easily erected and easily maintained in a good state of repair.

Now whatever kind of post is decided upon one must remember this fact that the life and usefulness of any wire fence, barbed or woven, depends almost entirely upon the corner and brace posts and these should always be selected and set with due care or the fence when up will be of little use and practically a waste of time and money. If one does not wish to go to the expense of getting all good posts at first he must by all means have the corner, end, brace and gate posts right.

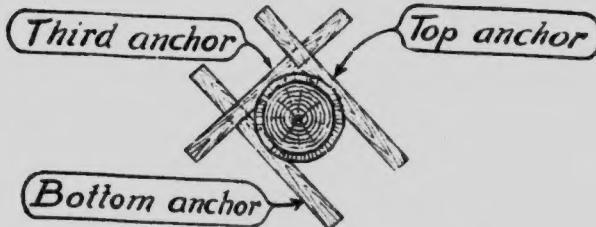
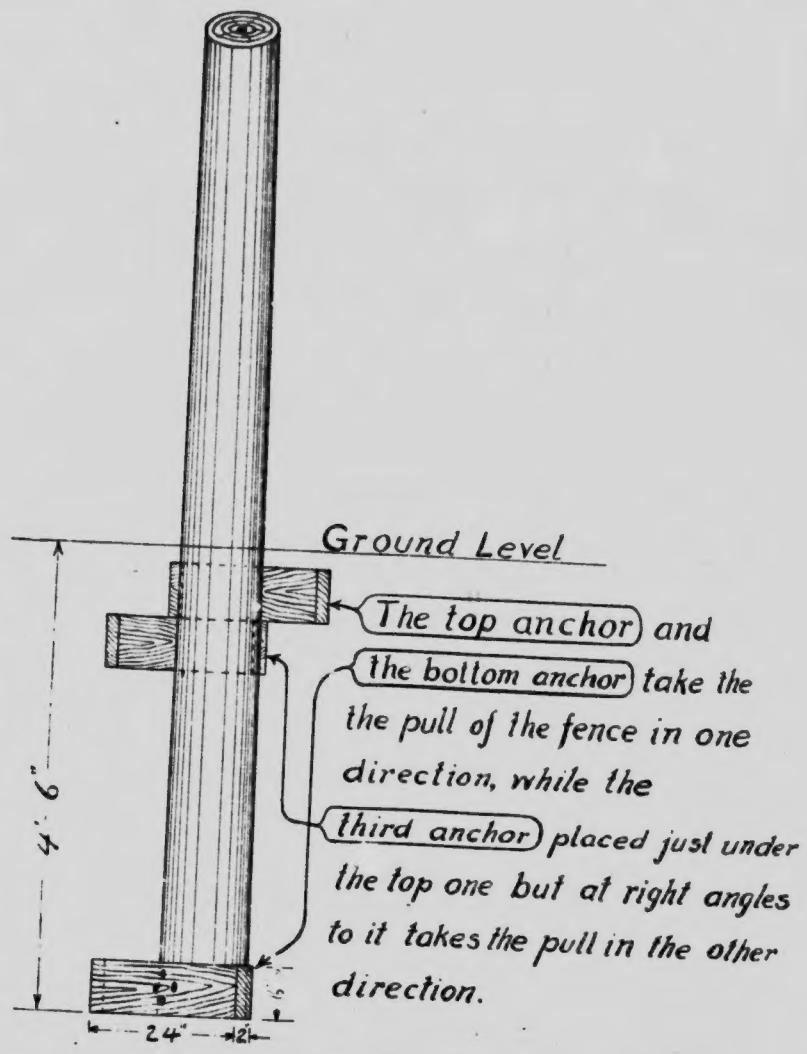
CORNER, END AND GATE POSTS.

A wooden corner, end, or gate post should be at least 8 inches in diameter at the top and should be set not less than $4\frac{1}{4}$ feet in the ground. It should extend about 2 inches above the last wire to give a good appearance. The hole should be dug large enough so that proper



METHOD OF ANCHORING CORNER POSTS WITH CONCRETE

bracing may be made as shown in the diagram. The post is set squarely against the solid ground. The corner may be set in solid concrete with large stones at the bottom. This will insure a much longer life as decay will not take place, as it usually does, within a few inches from the surface of the ground.



BRACES, ETC.

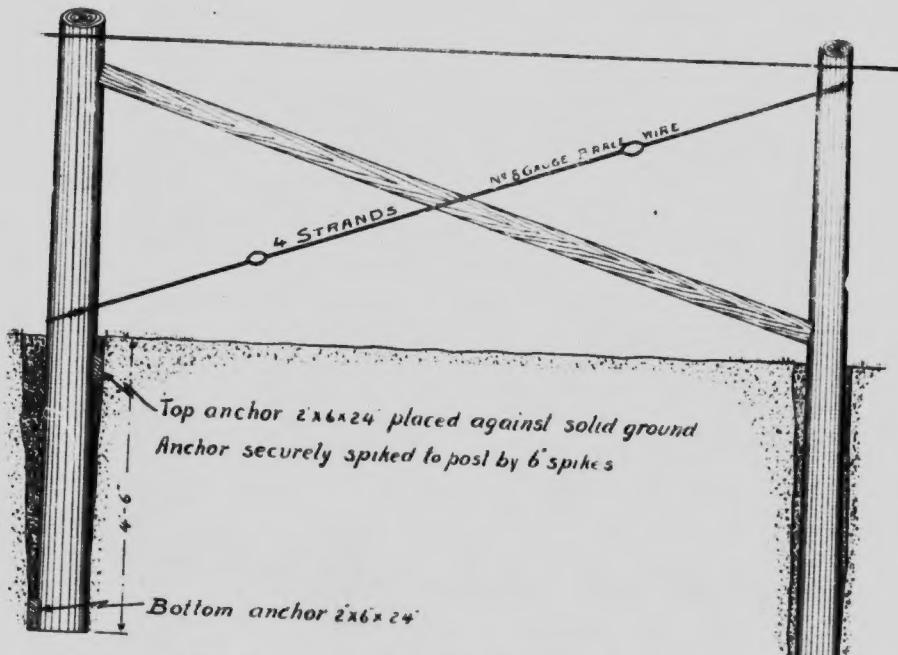
The accompanying diagrams indicate the best methods of setting wooden, corner, end, brace and gate posts and this method should be followed to the letter for the reasons given above, namely, strength, durability and usefulness. It will be noticed in the illustration that each brace post is provided with two anchors which are made of good solid wood, 2 inches thick, 6 inches wide and 2 feet long. These are spiked to the post—ne near the top of the ground on the side of the post in the

direction of which the wire is to be stretched and the other at the bottom on the opposite side. Stones at the bottom or better, concrete, then earth well tamped and concrete at the top will give satisfactory results. Brace posts are placed about 11 feet apart.

Wooden braces are made of clear, straight 4 inches by 4 inches about 12 feet long. The upper end of the brace is cut so as to fit flat against the first brace post about 10 inches from the top. The post is cut a little to admit it but not mortised enough to weaken the post. The brace is fitted to the other brace post in a similar manner at about 10 inches from the bottom and both ends should be securely spiked.

WIRE BRACE.

Wire bracing is made of No. 9 or larger soft wire. Fasten the free end about 4 inches from the bottom of the first post and carry wire around second brace post about 4 inches from the top and down to bottom of first post and again around to make double strand. Pull the wire tight with hand stretcher and make secure. Place a hammer handle or short smooth stick between the double strands of wire, twist a tight cable and the brace is complete.



Showing the correct method of bracing a fence.

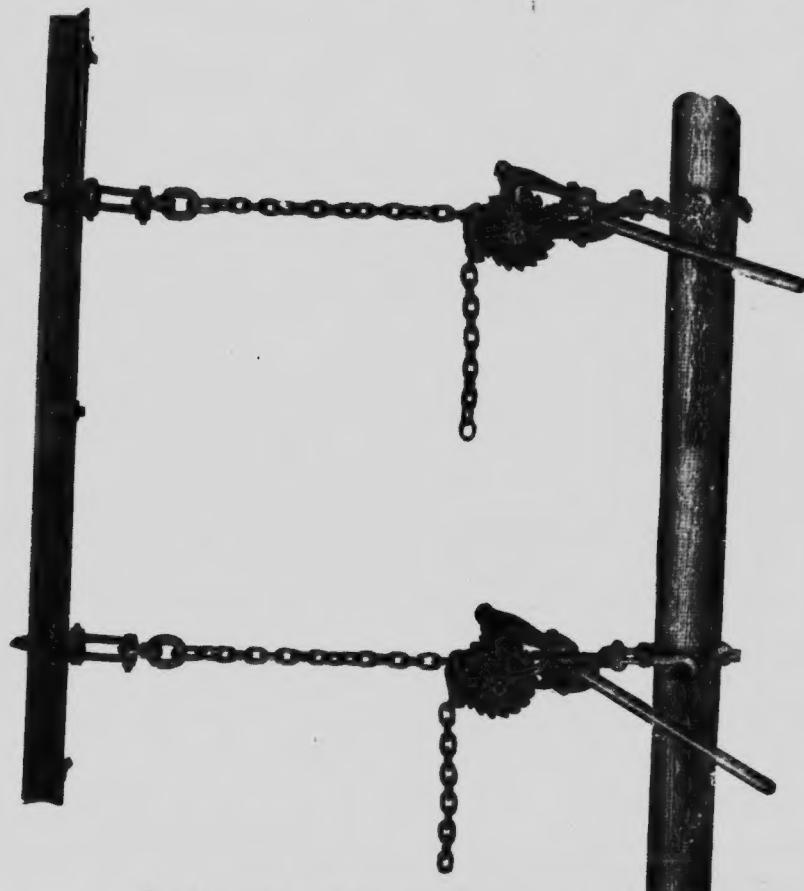
Concrete corners, etc., are set in the same way or built in but must be properly braced to stand the strain of stretching the wire. Steel posts are not so large but are large enough and are braced according to method as per the accompanying diagram.

Intermediate brace posts should be set in the line every forty rods. These give stability and durability to the fence. See diagram. The intermediate line post may be set one rod or one and a quarter rods apart. Some set them two rods apart but this is a little too great a stretch.

Now if the corners and braces are put in right at first so that the fence may be properly stretched it is possible and practicable to fill in the intermediate line with cheap posts until later when the steel posts can be got and driven to take their place. This cannot be done with corners. All line posts should be uniform and should be set in a straight line.

WIRE.

There are several types of wire fencing. Select one whose joints are well made where the uprights intersect the horizontal wires. Some uprights are easily moved along the horizontals. Others are securely stayed. The latter are the better. A seven strand, 26 inch fence with three barbed wires on top makes a good fence for all kinds of stock. Any wire fence for confining horses should have one barbed wire about 8 inches above the fabric, as horses lean on and rub the woven wire until something gives way. The barbed wire will lengthen the life of the fence many years. For prairie use one should buy in long length rolls. Time is thus saved as less splicing has to be done. On level ground lengths of 100 to 160 rods can be stretched. On uneven ground only 20 to 40 rods.

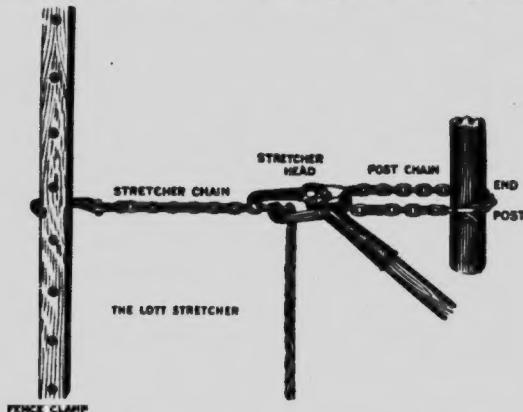


Stretcher and stretcher chains attached to post.

STRETCHING THE WIRE.

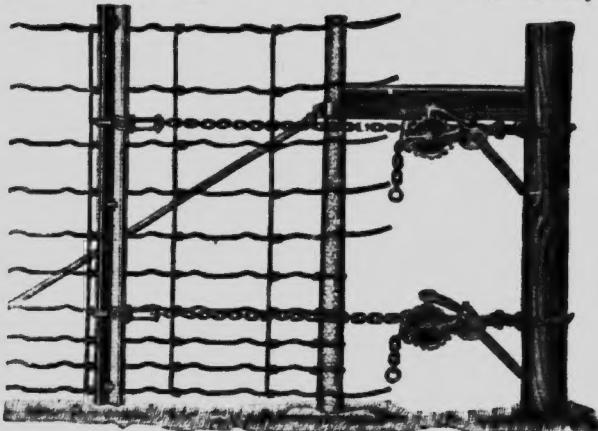
Unroll the wire, leave free end at end post; wind the free end of the top strand about seven-eighths of the way around the post at the proper distance from the ground; wrap the free end around the wire and by

means of a wire splicer make a neat secure wind. Do the same with the remaining wires. Then attach the stretcher to the other end and fasten the stretcher chain to the stretcher post; pull fence by means of stretcher



The "Lott" wire stretcher.

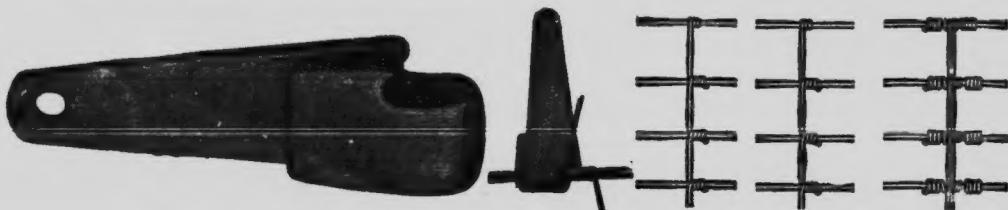
until the fence is upright and tight as a violin string. If there are depressions the fence should be just loose enough so that the weight of a man will bear it down to the ground. Staples should be driven to hold the wire up to place. The staple should not be driven solidly against the



Wire tightly stretched and ready to be wrapped around end post and spliced.

wire for the reasons that it breaks the galvanising, jams the wood and does not leave the wires free to move in case of a sudden jar on the fence nor when contraction or expansion takes place due to cold or heat. The wires will rust and break, the post rot and the fence will be less durable and subject to a greater outlay for repairs.

The accompanying diagrams show the tools used in fence building and indicate how to use them.



Splicer and spliced wire.

PRESERVATION OF WOODEN POSTS.

The following table indicates approximately the life of air dried posts of a few species:

Red Cedar.....	.30 years
White Cedar.....	10 years
Tamarac.....	8 years
White Willow.....	6 years
Jack Pine.....	3 to 5 years
Cottonwood.....	3 to 5 years

In order to prevent decay, wooden posts may be treated with creosote. This is done by companies who handle fence posts or it may be done on the farm. Creosote is a greenish brown oil, slightly heavier than water. It comes in 50 gallon barrels and costs 25 to 60 cents per gallon according to the grade. Two tanks are usually used. The tanks are made of 14 gauge sheet iron. The cylindrical tank should be $3\frac{1}{2}$ feet in diameter and $3\frac{1}{2}$ feet deep and the rectangular tank 4 by 4 by 8 feet. The cylindrical tank is the one in which the posts are first treated. The posts must be free from bark. All the inner coating should be completely removed. They should be perfectly seasoned in order to allow the oil to soak into the wood. The posts are stood upright with the butts down. The creosote is shoveled in so as to fill the tank and heated to 220 degrees Fahrenheit. The posts are left in this bath for 30 minutes to 3 hours according to the kind and condition of the timber. The object is of course to expand the pores and fill them with oil. The posts are then removed to the rectangular tank and treated to a bath in creosote at a temperature of 110 degrees Fahrenheit. The posts are held in place by a plank and lever. This fills the pores and renders the post much more durable. The process may be accomplished by the use of one cylindrical tank—first in oil heated to 220 degrees as above and then in cooled oil with fire drawn.

POINTS TO KEEP IN MIND.

1. Make plan of farm showing boundary of farmstead and future inside fences.
2. Select material, suitable posts, wire, etc.
3. Avoid poor materials.
4. The end, corner, and brace posts constitute the life of the fence.
Set them carefully according to directions.
5. Do not bruise wire or wood by driving staples too far home.
6. Use $1\frac{1}{4}$ inch staples in cedar posts.
7. Stretch all wires tight.
8. Make annual inspection and see that all parts of fence are kept in repair.

